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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,321	09/26/2003	Shinji Okamori	0925-0207P	5084

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EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/23/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/23/2007.

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mailroom@bskb.com

Office Action Summary

Application No.

10/670,321

Applicant(s)

OKAMORI ET AL.

Examiner

Kimnhung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5, 7,9 and 14 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,8,10-13,15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/29/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been examined. The claims 1-16 are pending. The examination results are as following.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3,5, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (US 2002/0018184 cited by applicant in view of Edlinger et al. (US 2002/0126260)

As to claim 1, Ito discloses in fig. 1, a projection type display apparatus comprising: a light source (10); a liquid crystal display for modulating light emitted from the light source (11) by turning a light polarization plane of the light (see 0086); a projection lens (51) for projecting the light modulated by the liquid crystal display onto a projection surface.

However, Ito does not disclose the liquid crystal light valve onto the projection and a pivotable light polarizer arranged between the light source and the liquid crystal light valve.

Edlinger et al. discloses in fig. 13, a projection exposure apparatus comprising a pivotable light polarizer (see the deflecting of S or P polarized, see 0088) and arranged an inherent between the light source (not shown, because the P- polarized light can also be reflected back to the light source by means of a mirror) and the liquid crystal light valve (see 0088).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the pivotable light polarizer and arranged between the light source and

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the liquid crystal light valve as taught by Edlinger et al. into the system of Ito for producing the claimed invention because this would provide the two coating systems, each reflecting and transmitting color-selectivity (see abstract).

As to claim 2, Ito discloses the projection-type display apparatus as recited in claim 1, further comprising a polarization-conversion element arranged between the light source (10) and the light polarizer, for emitting light after orientating the polarization plane of the light emitted from the light source into a single direction (see 0086).

As to claim 5, Ito, discloses further, wherein the light polarizer is arranged in the vicinity of the polarization-conversion element (see 0086).

As to claim 9, Ito discloses further, the light source (10) comprising a light source unit (11), wherein the light source unit includes a lamp (see light source lamp 10, see 0059) and an inherent concave mirror (12, because Ito discloses elliptical reflector 12 that is a mirror).

As to claim 14, Ito does not disclose that the pivotable light polarizer is a transmission-type polarizer.

Edlinger et al. disclose the pivotable light polarizer is a transmissison-type polarizer (see 0027).

It would have been obvious to one of ordinary skill in the art a the time the invention was made to implement the pivotable light polarizer is a transmissison-type polarizer as taught by Edlinger et al. into the system of Ito for producing the claimed invention because this would provide the two coating systems, each reflecting and transmitting color-selectivity (see abstract).

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3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable Ito (US 2002/0018184) and Edlinger et al. (US 2002/0126260) and in view of Liang et al. (US 2003/0206337).

Ito and Edlinger et al. discloses a projection type display apparatus comprising: a light source (11); a liquid crystal light valve for modulating light emitted from the light source by turning a light polarization plane of the light; a projection lens for projecting the light modulated by the liquid crystal light valve onto a projection surface as discussed above.

However, Ito and Edlinger et al. do not disclose that wherein the light polarizer is a grid polarizer, comprising a base material made of a dielectric in parallel-plate form, and a plurality of thin linear elements arranged on the surface of the base material at a predetermined spacing from each other.

Liang et al. discloses in fig. 1, a project system having a light polarizer (wire grid polarizer18) is a grid polarizer, comprising a base material may be made of glass-based polarization devices, and having an inherent plurality of thin-linear elements arranged on the surface of the base material at a predetermined spacing from each other (see 0053,0054).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the wire grid polarizer made of glass-based polarization device as taught by Liang et al. into the system of Ito and Edlinger et al. for producing the claimed invention because this would provide the wire-grid polarizers to be able to with-stand harsh condition of light intensity, temperature, and vibration and provide a higher numerical aperture than is available using conventional glass polarization beamsplitters (see 0053).

Allowable Subject Matter

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4. Claims 3,4, 6 and 8, 10-13,15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

None of the cited art teaches or suggests that a projection-type display apparatus comprising a second lens array including a plurality of lenses, arranged between the first lens and the polarization-conversion element, for approximately condensing onto the polarization-conversion element for the plurality of partial beams split by the first lens array as claim 3; or a light guide, arranged between the light source and the polarization-conversion element, having an incident end for receiving light emitted from the light source, and an emitting end for emitting the light as a planar light source; and a lens system, arranged between the light guide and the polarization-conversion element, for approximately condensing onto the polarization-conversion element light emitted from the emitting end of the light guide as claim 4; or a color composition unit arranged between the liquid crystal light valve and the projection lens, for composing the three colors of light modulated by the liquid crystal light valve; wherein the light polarizer is arranged between the color separator and the liquid crystal light valve in a light path of at least one of the three colors of light emitted from the color separator as claim 6; or a determination unit for determining from said average and said peak luminance values frame-by frame whether to alter luminance value, and outputting the determination results to the liquid crystal driving unit; wherein the polarizer driving unit determines pivotal angle for the drives the light polarizer based on said average and said peak luminance values, and the liquid crystal driving unit drives the

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liquid crystal light valve based on said determination results as claim 8; or a color separator arranged between the light source and the liquid crystal display light valve, for trichromatically separating light from the light source into red, green and blue light; and wherein the pivotable polarizer is provided between the light source and the color separator as claim 12; or a drive control unit for pivoting the pivoting the pivotable polarizer with respect to the light axis, wherein the pivotable polarizer adjusts the intensity of S-polarization component or the intensity of P-polarization component according to the pivotal angle as claim 15; or wherein the pivotal angle is zero when the intensity is maximum, and wherein the pivot able polarizer has a characteristic such that the intensity decrease in proportion to $\cos(\text{teta})$, wherein teta is the pivotal angle as claim 16.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number is (571) 272-7698.


The examiner can normally be reached on MON-FRI, FROM 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimnhung Nguyen
Patent Examiner
February 16, 2007



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